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ABSTRACT

The purpose of this study was to construct and validate a self-rating scale which can be easily administered and quickly scored for discriminating between those high school students who will dropout and those who will not. A 34-item scale was constructed for subjects with a fifth grade reading level. This scale was administered to 113 high school seniors and 113 dropouts matched on age and IQ. The Chi-square test and correlational analysis were conducted to examine the item characteristics. The results indicated that eighteen of the original thirty-four items with significant discrimination and predictive power ($p<.05$) could be retained in a revised scale. The items in the revised scale appear to fall into three main classes: (1) a failure syndrome, (2) involvement in extracurricular activities, and (3) home background. Extensive reliability and validity studies on the revised scale are planned. A copy of the original 34-item scale is included. (Author/CK)

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The Prediction of School Dropouts in Appalachia - Validation of a Dropout Scale

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The Prediction of School Dropouts in Appalachia - Validation of a Dropout Scale

Concern over the problem of school dropouts has been evident for almost two decades and has promoted many investigations. These studies have pointed out the tremendous waste in man power, money, and talent to the country, community and to the individual dropout.

Why does the dropout leave school? Miller (1963) listed the reasons given by 13,715 high school students who dropped out of the Maryland public high schools during the year ending June 30, 1961, as; (1) lack of interest 35.3%, (2) lack of scholastic success 17.8%, (3) cost of going to school and other economic reasons 11.1%, (4) marriage 9.2%, (5) pregnancy 5.3%, (6) committed to institution 4.5%, (7) military service 4.1%, (8) poor health 3.1%, (9) parental indifference 2.5%, (10) misbehavior 2.3%, (11) emotionally disturbed 2.1%, (12) lack of suitable program 1.4%, and (13) socially maladjusted 1.3%.

Most studies, however, question the above reasons given by the students themselves and point out these reasons represent symptoms. The "True" factors or coentropes of school "leavers" elude discovery. Allen (1956) states that the characteristics of a dropout will vary from state to state. Within the same school system, there are variations in dropout phenomena including rates between individual schools. Common factors which occur are: (1) lack of success in schoolwork which is shown by retainment in one or more grades, (2) lack of participation in out of class activities, (3) a low value on schooling by friends and family, and (4) a difficulty in meeting school costs. Less significant are the factors of sex, frequent change of schools, rural or urban residence, size of

school, and frequency of absence from school. Further breakdown of the above factors produces conflicting evidence.

Lack of success in schoolwork may be partially attributed to: (1) intelligence, (2) reading difficulties, (3) grade retardation and/or failure. Both Cook (1954) and Dresher (1954) as well as the U. S. Department of Labor (1960) found that grade retardation and failure was a factor in many dropouts. Other studies have found that reading failure would also be significant since most learning in an academic school situation would be based upon reading ability. Allen (1956) also reports that dropouts tend to be low in their abilities in both mathematics and reading. On the surface it might be concluded that the dropout is one who must have a low "I.Q". Again, past investigations do not always agree. The U. S. Department of Labor Study (1960) reported that while as a group, dropouts did have a lower I.Q. than those who did graduate, that at least 54% of those who dropped out had an I.Q. of 90 or above and should have been able to graduate (as opposed to 79% of the graduates who had I.Q. of 90 or above.) Cook (1954) found that the verbal I.Q. of the dropout was lower than that of the nonverbal I.Q. However, most investigators recognize that these "I.Q." tests vary in content and are usually group paper and pencil instruments, which are principally verbal in content.

General socio-economic factors also play a role. Miller (1963) reported the following information obtained on the 1961 dropouts in the state of Maryland: (1) source of family income - father 52% - mother 13% - both 27%, (2) occupation of the head of the household - unskilled 46% - skilled, selling, or services 41% - managerial or professional 6%, (3) education of the father - 9th grade or less 63%, (4) education of the mother - 9th grade or less 57%, (5) hours per week student had been employed - none 71%, (6) previous record of dropout - none 76%,

(7) participation in athletics - none 70%, (8) participation in other extra class activities - none 69%, (9) grade in school when dropped out, eight 12% - nine 19% - ten 27% - eleven 22% - twelve 12%, (10) attendance - irregular previous year 60% - irregular dropout year 72%, and (11) mental ability - below average 50%. These studies suggest that economic background, occupation and education of his parents, as well as the lack of social life and extracurricular activities are characteristic of the "typical" dropout. These studies also point out that at least half of these dropouts were intelligent enough to have been able to have completed high school if other factors had not been present.

The former student does not decide to drop out of school on the day that he becomes "of age." The events which led him toward this decision have been present for some time. The authors of this study felt the need of some type of indicator or instrument designed to pick out students who may become dropouts. Some of the more recent studies have devised or used dropout proneness scales (Mink, 1966; The West Irondequoit Central Schools, 1962; The Orange County Board of Public Instruction, 1962). These studies, with the possible exception of Mink's (1966) deal with the problem as it occurs in large urban areas. The Mink scale was designed to recognize potential dropouts in Appalachia. It requires the assistance of trained counselors to interview and rate students. If there were a proper counselor-pupil ratio, this should prove to be an effective instrument in detecting those who might drop out of school. But Appalachia is somewhat different from the areas previously studied. In some locations there are no counselors, in others they are insufficient in number, and in the few places where the system appears to have enough counselors on paper, the majority of the counselors are found only at the senior high schools, where they may be performing any number of non-counseling duties.

The purpose of this study was to develop and validate a self-rating scale which could be easily administered and quickly scored. One requirement was that it be a reasonably valid instrument for predicting potential high school dropouts in the areas of Appalachia. The scale was to be constructed for use with seventh graders and was to be simple in language and format.

Method and Procedure:

Items were selected from among those characteristics identified by research as being highly correlated with dropping out of school. To this list other factors were added which were thought to pertain to the youths of this area. The original scale was then constructed and presented to a small group of students and dropouts from University High School, Morgantown, West Virginia.

Utilizing information and experience obtained from the above pilot study, the scale was edited and the reading level of the scale was adjusted to a fifth grade level by a reading specialist. The resultant scale is shown in Table 1.

Insert Table 1 here

The scale was then presented to approximately fifty ninth grade high school students in each of four areas. These areas were Wayne, Monongalia, Harrison counties in West Virginia and Fayette county in Pennsylvania. The primary occupations of the students' parents were either farming or coal mining in all four areas. One area selected was in a city with a population of 20,000; while the others were either located in towns of less than 3,000 people or in completely rural areas. The scale was administered to the non-dropout in his local school.

The dropouts selected were those who would have also graduated in June of 1967 if they had remained in school. The entire dropout group was used in the three less populated areas. In the fourth area random selection was made on the basis of which grade the dropout had left school in order to obtain a correct proportion with those shown by the West Virginia School system.

Attempts were made to contact 375 dropouts using the following procedure. A packet made up of the self-rating scale, a pen, a self-addressed and stamped post card, a self-addressed and stamped envelope along with a form letter explaining procedure was mailed to each dropout. The form letter made use of a promise of a two-dollar gift certificate to the dropout upon completion and return of the scale within 15 days after the date on the letter. Of the 375 scales mailed, there were 125 or 33.3% returns. Follow up letters obtained only eight additional responses.

Due to the lack of correct addresses, 67 dropouts could not be contacted, another group of 13 dropouts indicated that they were unable to return the scale.

The dropouts and the seniors were matched by age and I.Q. in order to determine what other factors contribute to leaving school.

After matching, both groups have 113 subjects each for a total of 226 as shown on Table 2.

Insert Table 2 here

Results:

The null hypothesis that no significant difference would exist between the selections made by the seniors and the dropouts was tested in terms of the

Chi-Square distribution. Table 3 indicates that this Ho was rejected for eighteen of the thirty-four items at the .05 level of significance or less.

Insert Table 3 here

We also wanted to take a closer look at these items in terms of how each item was related to the dropping out of school. Thus, the contingency coefficient was used with the results shown in Table 4.

Insert Table 4 here

In general, the items which showed a significant difference between the seniors and the dropouts would fall into three main classes: (1) a pattern of failure or a failure syndrome, (2) involvement in extracurricular activities and (3) those factors which could best be described as "home life" or background. It appeared that there was no significant difference as to the amount of time the subject spent reading or how well he liked math. Likewise we were unable to find a difference in how well each group got along with their peers, or even in the number of friends that they had. While more of the dropouts had a greater distance to travel to school, it was not a significant difference.

Careful examination of Table 3 and Table 4 would indicate that Items 1, 2, 5, 6, 8, 11, 13, 16, 17, 18, 19, 20, 25, 26, 30, 31, 33, and 34 can be retained to formulate a revised scale with adequate predictive power.

Discussion

The purpose of this study was to construct a scale to discriminate between

those students who will drop out of school and those who will not. The results indicate that this must be only the first of many steps. The data cards were punched so as to allow them to be assigned weights using a Baker (1962) analysis. With these weights it is suspected that the refined statistical procedure will identify at least nine other items which the Chi-Square analysis indicated were not signifcant.

Concurrent validity could also be obtained as the Mink scale was administered on the same subjects. In addition, both the Demos "D" scale and the Cottle School Inventory, each available with national norms, are currently being presented to these subjects.

This brings into focus the final problem. How good is retrospect information? The study will be continued in an effort to establish reliability and predictive validity. Reliability will be established by test-retest techniques and predictive validity by the Baker analysis of existing data and cross-validation using random selection of two samples from the population under study. The study will finally result in a self-administered dropout proneness scale with empirically determined item weights, item validity, scale validity and reliability. It is suggested that the final stage should be to present the scale to a large sample of 7th graders and make a five-year longitudinal study.

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Table 1

1. How old were you in the 7th grade? _____13 or under, _____14-15, _____over 15
2. Were you failing any of your subjects in the 7th grade? _____none, _____one, _____two, _____three or more
3. How much time did you spend reading a day? _____very much, _____much, _____little _____very little
4. How well did you like arithmetic? _____very much, _____much, _____little _____very little
5. Have you ever failed a grade before the 7th grade? _____none, _____one, _____two or more
6. Did you think you were getting enough out of your school? _____yes, _____usually, _____seldom, _____no
7. Did you like your school work? _____yes, _____usually, _____seldom, _____no
8. How many days have you missed classes during the 7th grade? _____0-9 days, _____10-19 days, _____20 or more days
9. Did you like other students in your class? _____almost all, _____most of them, _____a few of them, _____almost no one
10. How did you like your school? _____very much, _____much, _____little, _____very little
11. Did you attend the school ball games, dances or parties? _____never, _____seldom, _____often, _____very often
12. How did you think your teachers liked you? _____very much, _____much, _____little, _____very little
13. How well did you like your teachers? _____very much, _____much, _____little, _____very little

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Table 1 (continued)

14. How did you get along with other students in your class? _____very well, ____well, _____not very well, _____not at all

15. How many friends did you have in school? _____more than 10, _____5-10, _____less than 5

16. To how many school teams or clubs did you belong? _____none, _____1-2,_____3 or more

17. How far did your father go in school? _____12th grade or higher, _____8th to 11th grade, _____7th grade or less

18. How far did your mother go in school? _____12th grade or higher, _____8th to 11th grade, _____7th grade or less.

19. Did you think your parents? _____wanted you to finish high school, _____didn't care if you did or did not finish high school, _____did not believe that school would help you

20. In your school work, did your parents: _____encourage you, ____discourage you

21. Did you live with: ____both your mother and father, ____either your mother or father, ____neither

22. About how many people are there in the town where you live? ____20,000 or more, ____5,000-19,000, _____500-4,999, _____20-299, _____less than 20

23. How far from your home was your school located? _____1-5 miles, ____6-15 miles, ____16 or more miles

24. Did you work outside of school: ____yes, ____no

25. How many brothers and sisters do you have? ____none, ____1, 2 or 3, ____4 or more

26. Did you feel tired? ____never, ____seldom, ____often, ____very often

27. Did you have any trouble with the other students or the teacher? ____never, ____seldom, ____often, ____very often

Table 1 (continued)

28. Have you ever been sick? ____never, ____seldom, ____often, ____very often

29. Did you feel that the teachers were fair to you? ____very often, ____often, ____seldom, ____never

30. Was it important to you that you graduate from high school? ____yes, ____no

31. Did you think that you would be able to graduate from high school? ____yes, ____probably, ____doubtful, ____no

32. Did you do your homework? ____very often, ____often, ____seldom, ____never

33. Did you belong to any organization such as 4-H, Boy Scouts, church groups? ____none, ____1-4, ____5 or more

34. Have you ever completed a project or participated in activities in any of these groups? ____Yes, ____No

Table 2

Matched Group for Analysis

County	Wayne	Harrison	Fayette	Monongalia	Total
Seniors	32	40	17	24	113
Dropouts	32	40	17	24	113
Total	64	80	34	48	226

Table 3

Chi-Square Values for Each Item

Item	X^2	Item	X^2	Item	X^2
1	25.6458* ($p < .001$)	13	11.1523* ($p < .02$)	24	.0322
2	26.6999* ($p < .001$)	14	.7856	25	12.6599* ($p < .01$)
3	1.1810	15	.3790	26	8.3501* ($p < .02$)
4	4.2229	16	7.6097* ($p < .05$)	27	4.5737
5	26.4332* ($p < .001$)	17	22.0509* ($p < .001$)	28	5.8940
6	10.3066* ($p < .02$)	18	14.2488* ($p < .001$)	29	3.4846
7	2.7957	19	10.3761* ($p < .01$)	30	20.5739* ($p < .001$)
8	18.0779* ($p < .001$)	20	4.6667* ($p < .05$)	31	49.1612*
9	3.1415	21	.3784	32	1.7258
10	2.5035	22	5.9631	33	15.4628* ($p < .001$)
11	7.8586* ($p < .05$)	23	2.6219	34	13.3249* ($p < .001$)
12	7.1715				

*significant at indicated level

Table 4

Item Coefficient of Contingency

Item	C	Max C	Item	C	Max C	Item	C	Max C
1	.3205*	.8166	13	.2182*	.8660	24	.0100	.7071
2	.3264*	.8660	14	.0592	.8166	25	.2313*	.8166
3	.0728	.8660	15	.0412	.7071	26	.1895*	.8660
4	.1356	.8660	16	.1811*	.8166	27	.1414	.8660
5	.3256*	.7071	17	.2993*	.8166	28	.1612	.8660
6	.2107*	.8660	18	.2449*	.8166	29	.1237	.8660
7	.1109	.8660	19	.2110*	.7071	30	.2900*	.7071
8	.2733*	.8166	20	.1428*	.7071	31	.4243*	.8660
9	.1175	.8166	21	.0412	.7071	32	.0872	.8166
10	.1049	.8660	22	.0520	.8944	33	.2542*	.7071
11	.1841*	.8660	23	.1082	.7071	34	.2368*	.7071
12	.1766	.8660						

*Item significant